



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/742,420	12/22/2000	Yves Michel Henuset	10989-1	8017

25277 7590 10/06/2003

NATIONAL RESEARCH COUNCIL OF CANADA  
1500 MONTREAL ROAD  
BLDG M-58, ROOM EG12  
OTTAWA, ONTARIO, K1A 0R6  
CANADA

EXAMINER

PHASGE, ARUN S

ART UNIT	PAPER NUMBER
----------	--------------

1753

DATE MAILED: 10/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/742,420

Applicant(s)

HENUSET ET AL.

Examiner

Arun S. Phasge

Art Unit

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-22, 24-26, 29 is/are rejected.
- 7) ☐ Claim(s) 9, 23, 27 and 28 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 9 and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims appear to negate the independent claim from which they depend, since the independent claims recite that the membrane "preferentially allows the passage of protons over other ions". Bipolar membranes would not allow the passage of protons over other ions.

Claim 12 is rejected under 35 U.S.C. 112, second paragraph as being indefinite, since it appears to contain two claims one of which depends upon claim 12.

Regarding claim 22, the phrase "i.e. or for example" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim 23 recites the limitation "the current density through the membrane" in line 25. There is insufficient antecedent basis for this limitation in the claim.

Claim 24 recites the limitation "the ionic strength" in line 27. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-8, 10, 15 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Steward, U.S. Patent 5,756,874.

Steward discloses the claimed method and apparatus for the electrochemical process for the processing of organic wastes comprising an electrochemical cell having an anode compartment containing an anode made of the same types of materials claimed and an acidic anolyte containing the organic contaminant, a pump for circulating the anolyte through the anode compartment, a cathode compartment having cathode and acidic catholyte and a pump for

Art Unit: 1753

circulating the catholyte through the cathode compartment, a cation separator which would preferentially allow the passage of protons over other ions and a power supply as claimed (see claims 1-30 and figure 7 and col. 5, lines 40-46).

Therefore, since the Steward patent discloses each and every limitation, the claims are anticipated.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 11-14, 16-20, 22, 24-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steward as applied to claims above, and further in view of Downes, Jr. et al. (Downes), U.S. Patent 5,230,782.

The patent does not disclose the use of the cell to treat a metal plating bath, such as tin, copper or zinc. The reference further does not disclose the same range of current density. The reference further does not disclose the means for removing the metal from the cathode chamber.

The Downes patent is cited to show the use of anodic oxidation to remove organic content from a copper-containing bath (see abstract). The Downes patent further discloses the similar range of current density (see col. 6, lines 1-20).

Consequently, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the disclosure of the Steward, because the Downes patent teaches the anodic oxidation of the plating bath and the current density used to treat said acidic copper plating bath.

The Downes patent further teaches the use of cathodes to prevent or provide easily detachable plated metals (see col. 7, lines 27-39). The reference does not disclose the means to remove the metal, however, means such as reversal

Art Unit: 1753

of polarity or dilute acids are conventional techniques. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the disclosure of the Steward to allow the removal of metals from the cathode, because such techniques are conventional in the art of electrolysis to remove materials plated onto the electrodes.

***Allowable Subject Matter***

Claims 9, 23 and 27-28 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: none of the prior art discloses the use of a bipolar membrane to separate the cell.

None of the references disclose the use of ultrasound or masking areas of the cathode to produce local high current densities, to remove the deposited metal without disassembling the cell.

***Conclusion***

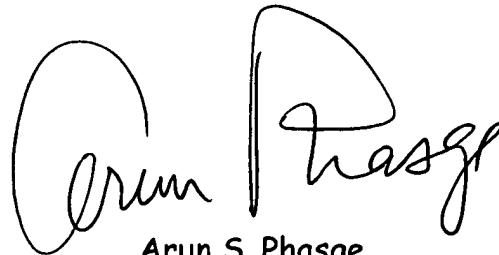
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arun S. Phasge whose telephone number is

Art Unit: 1753

(703) 308-2528. The examiner can normally be reached on MONDAY-THURSDAY, 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X Nguyen can be reached on (703) 308-3322. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

A handwritten signature in black ink, appearing to read 'Arun Phasge', with a large, stylized initial 'P'.

Arun S. Phasge  
Primary Examiner  
Art Unit 1753

asp